Regulation of Sonographers:
A Jurisdictional Review

Prepared by:
Secretariat of Health Professions Regulatory Advisory Council (HPRAC)

June 2013
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Objective

The objective of this jurisdictional review is to provide evidence-informed research on the regulation of sonographers in Canadian provinces, selected U.S. states, Australia, and the U.K. Information on eight topics was gathered:

1. Current status of the profession
2. Relevant legislation, regulations, or by-laws
3. Scope of practice
5. Entry to practice requirements
6. Practice settings

Context

The profession of sonography is a relatively new health profession; and ultrasound technology is continuously evolving. There are currently approximately 5000 diagnostic sonographers practicing across Canada.

Diagnostic sonography can be understood as a procedure that is ordered by a physician; performed by a sonographer; and interpreted by a specialized physician. Diagnostic sonographers use high frequency sound waves to produce an image of the internal structures of the body. In Ontario, practitioners are grouped according to specialty:

- Echocardiography (specialize in ultrasound of the heart)
- Vascular sonography (specialize in ultrasound of arteries)
- General sonography (generalists)

“Diagnostic sonographers” are also known as “ultrasound technicians” or “ultrasonographers”.

In 2000, HPRAC recommended that the profession of sonography be regulated under the Regulated Health Professions Act, 1991 (RHPA) as part of the profession of medical radiation technology and governed by the College of Medical Radiation Technologists of Ontario (CMRTO). Regulation of the sonography profession has not occurred.

On March 26, 2010, the Minister of Health and Long-Term Care, the Honourable Deb Matthews, asked HPRAC, “with regard to [the 2000] HPRAC report, make recommendations on the currency of, and any additions to, advice provided in relation to the regulation of Diagnostic Sonographers”.

On May 7, 2013, the Minister provided clarity on her expectations for this referral. In order for HPRAC to conduct a broad consultation program with members of the diagnostic sonography community who may not have been included in HPRAC’s original review, the Minister revised timelines for the receipt of advice on the regulation of diagnostic sonographers to June 30, 2014.
Search Methodology

A review of existing regulatory schemes, including legislation and regulations, where applicable, was conducted in all of the reviewed jurisdictions.

- Canada: all provinces
- International: Australia, United Kingdom (UK)
- United States (US): New Mexico, Oregon, Connecticut and West Virginia. The jurisdictions were chosen based on geographical characteristics, regulatory status, maturity of the profession, and demographic characteristics.

The websites for each jurisdiction’s regulatory body and professional association, if available, were reviewed. In addition, an internet search of academic databases, the grey literature and other resources was conducted. Where adequate information was not available online, key informant interviews were held by telephone and/or email with representatives from regulatory bodies and government. Key themes were identified and defined (see Table 1).

Table 1: Research Theme

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current status of the profession</td>
<td>Is the profession statutorily regulated? In the absence of regulation, how is the public protected? How long has the profession been regulated? Is the profession regulated in a stand-alone regulatory college or in conjunction with affiliated health professions? Does the profession utilize different classes of registration? This category also includes information on complaints, discipline, professional misconduct, code of ethics, quality assurance and title protection, where available.</td>
</tr>
<tr>
<td>Relevant legislation, regulations, or by-laws</td>
<td>A combination of laws, regulations, and by-laws that support the regulatory model. An organizational entity is typically assigned the authority to regulate using these tools.</td>
</tr>
<tr>
<td>Scope of practice</td>
<td>“Scope of Practice” refers to a description of the acts and services a profession is legally authorized to offer or perform. It identifies what a profession does and how it does it. Which variables define the profession’s scope of practice (e.g. national competencies, education, experience, law, facility policy, etc.)?</td>
</tr>
<tr>
<td>Controlled Acts/Restricted Acts</td>
<td>In jurisdictions that employ a controlled acts scheme, the performance of certain acts is limited to a group of regulated health professionals. In some jurisdictions, the acts which the profession cannot perform are outlined in a statute, regulation, or by-law. For the purposes of this review, these are referred to as “restricted acts”. Do members of the profession have access to controlled or restricted acts? If so, which one(s)?</td>
</tr>
</tbody>
</table>
### Current Status of the Profession

Among the reviewed jurisdictions, sonography is regulated in a minority of districts. Quebec is the only Canadian province that currently regulates sonography. Elsewhere, across Canada, several provincial professional groups are independently pursuing self-regulation for their members. Work is in varying stages of completion; and Nova Scotia is further ahead of other provinces. Nova Scotia has recently proposed legislation (Bill 70) which would amend the current *Medical Imaging and Radiation Therapy Professional Act* and regulate technologists performing MRIs and ultrasounds, including medical diagnostic sonographers. Similar to other jurisdictions that regulate the profession, and if passed, sonographers will be grouped with other medical imaging professionals.\(^1\)

Currently, New Mexico\(^2\) and Oregon\(^3\) are the only American states to regulate diagnostic medical sonography. Sonographers are not regulated in Connecticut and there is no requirement for licensing/certification to practise ultrasound technology; however a July 1, 2009 law includes a prohibition on the use of ultrasound for non-diagnostic purposes.\(^4\) The West Virginian Legislative Auditor,\(^5\) in recommending not to regulate sonography in January 2012, published the following finding\(^6\):

> The Legislative Auditor does not recommend licensure of sonographers because physician supervision over sonographers is the primary safeguard against harm, which will not change if the profession is licensed.

There are reports of a “severe” shortage of sonographers in Canada; this has been attributed to a lack of capacity in education programs, with a maximum of 165 Canadian graduates per year.\(^7\) In the US, the Society of Medical Diagnostic Sonography (SMDS) also reported a “severe” shortage of sonographers.\(^8\)

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5. The Legislative Auditor is statutorily responsible for making reports and recommendations to the Legislature on whether a profession should be regulated and conducts research on special topics as requested by the Legislature
In the UK, a February 2013 report on skilled shortages reports a vacancy rate of 10.9 per cent for sonographers, with a lack of suitable applicants cited as the major reason for the vacancies.⁹

### Table 2: Overview of regulatory status of jurisdictions

<table>
<thead>
<tr>
<th>Canadian Province</th>
<th>Currently Regulated</th>
<th>Not Currently Regulated</th>
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<tbody>
<tr>
<td>British Columbia</td>
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<tr>
<td>Alberta</td>
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<td>Saskatchewan</td>
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<td>Manitoba</td>
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<td>Ontario</td>
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<td>Quebec</td>
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<tr>
<td>New Brunswick</td>
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<td>Nova Scotia</td>
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<tr>
<td>Prince Edward Island</td>
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<tr>
<td>Newfoundland and Labrador</td>
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<td>Nunavut</td>
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<tr>
<td>Northwest Territories</td>
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</tbody>
</table>

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<thead>
<tr>
<th>United States</th>
<th>Currently Regulated</th>
<th>Not Currently Regulated</th>
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<tbody>
<tr>
<td>New Mexico</td>
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<tr>
<td>Oregon</td>
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<tr>
<td>Connecticut</td>
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<tr>
<td>West Virginia</td>
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<table>
<thead>
<tr>
<th>International</th>
<th>Currently Regulated</th>
<th>Not Currently Regulated</th>
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<tbody>
<tr>
<td>United Kingdom</td>
<td></td>
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<tr>
<td>Australia</td>
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</tbody>
</table>

### Relevant Legislation, Regulations, or By-laws

Because few jurisdictions regulate the sonography profession, there is a limited amount of information available on regulatory models. Where regulated (i.e., New Mexico, Oregon and Quebec), sonography exists within the regulatory framework of other diagnostic imaging professionals (e.g., medical imaging and radiation technologists).

In some provinces the qualifications of sonographers are indirectly ensured through laws, standards, guidelines or policies that apply to the medical facilities where ultrasounds are performed. For example, Ontario Regulation 57/92 under the *Independent Health Facilities Act, 1990* states that “persons providing services in independent health facilities must be qualified according to generally accepted professional standards.”

⁹ Migration Advisory Committee (February 2013). “Skilled Shortage Sensible”, p:100
In some jurisdictions, the respective regulatory college for physicians have also issued directives (e.g., Ontario, British Columbia, Alberta, Saskatchewan and Manitoba). The College of Physicians and Surgeons of Ontario (CPSO) has established standards for independent health facilities which set out sonographer qualifications.\(^{11}\)

The *Independent Health Facilities Clinical Practice Parameters and Facility Standards* document states that sonographers must be registered with a national credentialing organization such as the American Registry for Diagnostic Medical Sonographers (ARDMS) or the Canadian Association of Registered Diagnostic Ultrasound Professionals (CARDUP)\(^ {12}\) and undertake continuing professional development through the organization; membership with the Canadian Society of Diagnostic Medical Sonographers (CSDMS) is recommended. The document notes that it is CPSO policy that “…it is inappropriate and contrary to good medical practice to use ultrasound only to view the fetus to obtain a picture or video of the fetus or to determine gender of the fetus.” Likewise, the CSDMS has issued professional practice guidelines that state, among other things, that the CSDMS “does not support persons or facilities that participate in ultrasound for entertainment activities. Liability insurance purchased through the CSDMS group insurance plan does not cover any activities carried out for entertainment ultrasound purposes.”\(^ {13}\) The CSDMS does not support using ultrasound for entertainment purposes because the facilities that perform these activities may operate outside of medical guidelines and may lack technical safeguards, operator expertise or governance of technical competency.\(^ {14}\)

### Scope of Practice

In most of the reviewed jurisdictions, sonographers perform diagnostic examinations under the authority and supervision of another regulated profession. The CSDMS’s Professional Practice Guideline Policy states that “the physician must be available for consultation, via telephone or through the Picture Archiving and Communication System (PACS)”\(^ {15}\). In the US, the Society of Diagnostic Medical Sonography (SDMS) issued clinical practice standards which state that “a physician must be present in [the] office suite when an ultrasound exam or vascular procedure is performed”.\(^ {16}\) In Canadian provinces, the application of an ultrasound for diagnostic or imaging purposes is usually ordered by a physician. In Ontario, Regulation 107/96 under the *Regulated Health Professions Act, 1991* (RHPA) states that a person may apply sound waves for the purpose of diagnostic ultrasound provided it has been ordered by a physician, a midwife, or an extended class nurse.\(^ {17}\)

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10 O Reg 57/92, ss 4(2)
12 CARDUP manages a Canadian registry of certified sonographers. As an organization, CARDUP certifies entry to practice competencies for Canadian sonographers, maintains the National Competency Profile and administers competency testing and knowledge based exams.
14 Ibid
15 Ibid
16 Ibid
17 O Reg 107/96, S 7.1(1-2)
CARDUP and the CSDMS jointly developed a national competency profile (NCP) for the sonography profession. The NCP lists the competencies (tasks and proficiency levels) required of each type of sonographer, with some core competencies applicable to all sonographers. The NCP provides the foundation for curriculum development in Canada’s accredited sonography training programs. The CSDMS has based its “Professional Practice Guidelines and Policy Statements for Canadian Sonography” on the NCP. The professional practice guidelines reflect the behaviour and performance levels expected in clinical practice settings in which sonographers work.

CSDMS has defined the scope of practice for Canadian sonographers as follows:

A sonographer must have the knowledge, skills and judgement necessary to perform a thorough diagnostic ultrasound, acquire and analyse data and provide a professional account of sonographic findings. Sonographers must demonstrate exemplary communication and patient care skills. The boundaries of practice are established by law and limited to the areas for which an individual has shown clinical competency.

**Controlled / Reserved / Restricted Acts**

Authorized acts protect the public by ensuring that services that present a significant risk of harm are performed only by those professions who are qualified to perform them. However, each profession may perform the reserved acts granted to it only within the context of its defined scope of practice.

In non-regulated jurisdictions, access to these acts often require delegation by a physician or other authorized health professional. For example, in Ontario, the RHPA lists 14 controlled acts. One of these controlled acts is applying or ordering the application of a form of energy. The controlled acts currently being performed by Ontario sonographers include: putting an instrument, hand or finger, beyond the labia majora and applying a form of energy. The performance of controlled acts in Ontario is achieved through the delegation of the controlled act by the physician who is responsible for interpreting the results of the ultrasound.

In Quebec, a regulated jurisdiction, health professionals practicing sonography are permitted access to similar controlled acts. Quebec’s “medical imaging technologists” and “medical electrophysiology technologists” perform the same duties as Ontario sonographers; they also perform other duties not performed by Ontario’s sonographers. Because Quebec sonography professionals have a wider scope of practice, they are given access to additional controlled acts that sonographers in other jurisdictions do not have access to.

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22 RHPA, s 27(2)
23 RHPA, s 27(2)6v
24 RHPA 27(2)7
Entry to Practice Requirements

Where sonography is not regulated, entry to practice requirements are generally set by the employer.

An accreditation process exists for sonography educational programs. The Canadian Medical Association (CMA) has developed a process for accrediting educational programs in health sciences, including sonography. Accredited educational programs must meet the following requirements:

1. Relevance: The program enables students to attain the competencies specified in the national entry-level competency profile for the profession;
2. Students: The program supports the students’ educational interests and protects their rights;
3. Resources: The program’s resources are adequate to support student learning to the level required to meet the objectives;
4. Integration: the program provides an integrated learning experience for students; and
5. Program evaluation: the program’s evaluation process results in continuous quality improvement.”

There are thirteen CMA-accredited diagnostic ultrasound technology programs across Canada; six are in Ontario. The number of non-accredited programs in Ontario is unknown. A feature of CMA-accredited programs is a built-in “CARDUP Clinical Skills Assessment Process” which provides evidence that the student has achieved NCP-level clinical competence.

Sonography credentialing bodies provide assurance to the public and employers that sonographers are competent at entry to practice:

- CARDUP is the credentialing body that recognizes Canadian practice standards through administering written and practical exams; it also maintains a Canadian registry. Many of CARDUP’s registrants graduated from a CMA-accredited program; candidates from non-accredited programs are individually assessed. Other prerequisites for CARDUP registration are the successful completion of the knowledge based written exam in the applicant’s discipline; the clinical skills assessment in the applicant’s discipline; and the payment of fees. To maintain registry status, CARDUP members are also required to engage in continuing education.

- The ARDMS is the US national-level certification organization that ensures the competency of sonographers by providing a national exam, continuing education, and a registry. ARDMS establishes, implements and administers standards, policies and procedures for sonography. To maintain registration, sonographers must engage in continuing education.

There are differences between the two credentialing bodies. For example, CARDUP issues credentials in one or more of the following specialties:

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28 Practicing ultrasonographers and graduates from non-accredited educational programs must meet the same requirements as new graduates from the accredited programs.
- CRGS  Canadian Registered Generalist Sonographer (Core and Generalist)
- CRCS  Canadian Registered Cardiac Sonographer (Core and Cardiac)
- CRVS  Canadian Registered Vascular Sonographer (Core and Vascular)

ARDMS issues credentials in one or more of the following specialties:
- RDMS  Registered Diagnostic Medical Sonographer
- RDCS  Registered Diagnostic Cardiac Sonographer
- RVT    Registered Vascular Technologist
- RPVI   Registered Physician in Vascular Interpretation
- RMSK   Registered in Musculoskeletal™ sonography

Professional associations and organizations representing the profession encourage sonographers to become credentialed through CARDUP and/or the ARDMS. In representing the sonography profession nationally, the CSDMS encourages sonographers to become credentialed through CARDUP; reference the NCP practice guidelines; and follow the principles described in both the CSDMS’s code of ethics and its code of conduct for sonographers. CARDUP members are further obligated to follow the CARDUP code of ethics. It is possible to practice in many jurisdictions without being a member of CARDUP and/or the ARDMS, however, employers in Canada are increasingly requiring certification through CARDUP.

In US jurisdictions, an Associate’s degree or a postsecondary certificate is required for entry to practice; many employers also require professional certification.

Practice Settings

The services sonographers perform are generally carried out in a hospital, independent health facility or other clinic settings. The sonographer works independently, in conjunction with a physician (usually a radiologist, obstetrician/gynecologist or cardiologist). The Canadian federal government has described the job duties of the sonographer as including some or all of the following duties:

- Operating ultrasound imaging equipment that transmits high frequency sound pulses through the body to produce images of those parts of the body requiring examination;
- Monitoring the examination by viewing images on a video screen, to evaluate the quality and consistency of diagnostic images, and make adjustments to equipment, as required;
- Recording, storing and processing scanned images by using a camera unit connected to ultrasound equipment;
- Observing and caring for patients throughout the examination to ensure patient safety and comfort;

31 Until 2000 and the establishment of CARDUP, the ARDMS was the only credentialing body available to Canadian sonographers. Many sonographers continue to maintain their ARDMS membership or take out new ARDMS memberships.
• Preparing examination reports for physicians to aid in the monitoring of pregnancies and the diagnosis of cardiac, abdominal, ophthalmic, vascular and other disorders;

• Performing quality control checks on ultrasound equipment to ensure proper operation and perform minor repairs and adjustments as required; and

• Medical sonographers may specialize in abdominal, cardiac, cerebral, obstetrical and gynaecological, ophthalmic, intraluminal or peripheral vascular sonography. They may also specialize in adult or pediatric echocardiography or neurosonology.

Common Job Titles:
The following are a list of common titles used for the profession:
• diagnostic medical sonography
• medical sonographer
• registered diagnostic medical sonographer (RDMS)
• ultrasound technologist
• sonography often combing with medical imaging and radiation technologist professions

Typical Employers:
• hospitals
• medical laboratories/independent health facilities
• clinics
Appendix 1: Information by Jurisdiction

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Current Status of the Profession</th>
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<tbody>
<tr>
<td>British Columbia (BC)</td>
<td>Currently not regulated.</td>
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</table>

Sonographers in British Columbia have explored the possibility of joining with medical laboratory and medical radiology technologists to form a joint regulatory college. The BC government’s Health Professions Council recommended in a December 2002 report that a new regulatory college be established which would include ultrasonographers as a membership class along with medical imaging technologists and radiation technologists.\(^{35}\) In 2003, the BC government considered establishing a single college that would join six health technology professions (i.e., medical laboratory technology, medical radiation technology, respiratory therapy, cardiology technology, clinical perfusion, and ultrasonography).\(^{36}\) It was reported that this model was rejected due to the diversity of interests represented from each of the professions.\(^{37}\)

<table>
<thead>
<tr>
<th>Relevant Legislation and Regulations (if any)</th>
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<tbody>
<tr>
<td>B.C. Reg. 426/97 under the Medicare Protection Act references facilities where sonography is performed:</td>
</tr>
<tr>
<td>- Section 43(1)f specifies that “the standards of testing and analysis of the diagnostic facility, the number of skilled and qualified personnel employed by the diagnostic facility, the level of supervision by medical personnel, and the range and availability of services provided by the diagnostic facility must be maintained at a level [a special committee] considers satisfactory”.</td>
</tr>
</tbody>
</table>

| Scope of Practice | N/A |
| Controlled Acts/Reserved Acts/Restricted Acts | N/A |

### Entry to Practice Requirements

Entry to practice requirements are set by employers.

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\(^{37}\) Ibid
<table>
<thead>
<tr>
<th>Jurisdiction</th>
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<tbody>
<tr>
<td>Alberta</td>
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<thead>
<tr>
<th>Current Status of the Profession</th>
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<tbody>
<tr>
<td>Currently not regulated.</td>
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<thead>
<tr>
<th>Relevant Legislation, Regulations and By-laws</th>
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<tbody>
<tr>
<td>Section 2(1)(n)(iii) of Schedule 7.1 of Alberta's Government Organization Act lists “ultrasound imaging, including any application of ultrasound to a fetus” as a restricted activity.</td>
</tr>
</tbody>
</table>

Some regulated health professionals have access to ultrasound imaging. For example, Section 14(2)(b) of Alberta Regulation 61/2005 under the Health Professions Act (the Medical Diagnostic and Therapeutic Technologists Profession Regulation) permits medical radiation technologists with advanced training to have access to the restricted activity of applying non-ionizing radiation for the purpose of ultrasound imaging. Section 17(o) of Alberta Regulation 350/2009 under the Health Professions Act (the Physicians, Surgeons and Osteopaths Profession Regulation) authorizes physicians to “order or apply non-ionizing radiation in lithotripsy, magnetic resonance imaging or ultrasound imaging, including any application of ultrasound to a fetus”.

The regulatory college for physicians in the province, the College of Physicians and Surgeons of Alberta, accredits medical services (such as sonography and other diagnostic imaging services) in hospital and non-hospital facilities. It has set diagnostic imaging standards for its members which outline the supervision requirements of the imaging physicians, the physicians’ responsibility for evaluating the qualifications of the sonographers and other requirements.38 The standards specify, for example, that “a medical imaging facility/department shall be under the complete direction and supervision of a medical director who is a physician licensed to practice medicine in Alberta”. Physicians are required to ensure that sonographers are competent to operate equipment; are registered with the provincial association; are registered with the Canadian Association of Registered Diagnostic Ultrasound Professionals (CARDUP) or the American Registry for Diagnostic Medical Sonographers (ARDMS) or the Alberta College of Medical Diagnostic and Therapeutic Technologists (ACMDTT); and co-train yearly with sonographers when the sonologist is geographically distant from the site of ultrasound testing.

<table>
<thead>
<tr>
<th>Scope of Practice</th>
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<td>N/A</td>
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<table>
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<tr>
<th>Controlled Acts/Reserved Acts/Restricted Acts</th>
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<tbody>
<tr>
<td>N/A</td>
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Entry to Practice Requirements

Certification is not mandatory to practice. However, most employers require that sonographers be registered with the ARDMS and/or CARDUP. Sonographers employed by Alberta Health Services are required to complete an approved post-secondary diagnostic medical sonography program, register with CARDUP and successfully complete written and practical competency exams.

40 Alberta Health Services delivers medical care on behalf of the Government of Alberta’s Department of Health through 400 facilities (e.g., hospital, clinics, continuing care facilities, mental health facilities and community health sites) and while providing a variety of programs and services.
Jurisdiction

Saskatchewan (SK)

Current Status of the Profession

Currently not regulated

Relevant Legislation, Regulations and By-laws

Although diagnostic imaging facilities are outside the jurisdiction of the regulatory college for physicians in the province, diagnostic imaging facilities are obligated to meet standards set by the College of Physicians and Surgeons of Saskatchewan in order for the health care professional to have a professional relationship with the facility. Practice standards have been set out in bylaw\(^{41}\) and specify that, among other things, both private and public imaging facilities are required to appoint a physician or an imaging specialist as Director. The Director retains overall responsibility and ensures that sonographers have completed a recognized education program and are registered with ARDMS or CARDUP.

*The Radiation Health and Safety Regulations, 2005\(^ {42}\)* regulates the use of ultrasound equipment including safe use and practice and quality assurance for ultrasound procedures. For example, the qualifications required for operator of diagnostic ultrasound equipment are as follows:

Ultrasound equipment is regulated through Saskatchewan’s Radiation Health and Safety Regulations, 2005. Section 32 specifies that “an owner of medical ultrasound equipment used for diagnosis must ensure that each operator of the equipment is:

a) a duly qualified medical practitioner;
b) a medical ultrasonographer who possess the qualifications necessary for membership in the Saskatchewan Association of Diagnostic Medical Sonographers;\(^ {43}\)
c) a student who is under the direct supervision of a person who possess the qualifications set out in clause a or b; or
d) a person who has been formally trained:
   a. to carry out the procedures for which the equipment is to be used; and
   b. can demonstrate to the satisfaction of an officer his or her knowledge of the equipment, the biological effects associated with its use and the necessary safety procedures.

Scope of Practice

N/A

Controlled Acts/Reserved Acts/Restricted Acts

\(^{41}\) Bylaw 25.1 of the College of Physicians and Surgeons of Saskatchewan, http://www.quadrant.net/cppss/pdf/CPSS_Bylaws.pdf


\(^{43}\) Sonographers wanting to register with the Saskatchewan Association of Diagnostic Medical Sonographers must possess certification from either the ARDMS or the CARDUP
Entry to Practice Requirements

According to the Saskatchewan government\(^{44}\), employment as a diagnostic medical sonographer typically requires the following:

- completion of an approved diagnostic medical sonography program; and
- successfully passing the ARDMS examinations.

Jurisdiction

Manitoba

Current Status of the Profession

Currently not regulated.

Relevant Legislation, Regulations and By-laws

Section 40(1) of the Medical Act specifies that the College of Physicians and Surgeons of Manitoba (CPSM) may investigate and inspect all diagnostic and treatment facilities in which services are performed by their members other than those which are under the jurisdiction of provincial or municipal governments and those facilities that are approved hospitals under The Hospitals Act.

Section 40(2) permits the CPSM to make by-laws regarding the operation of the diagnostic facilities to ensure that the procedures and standards of care set by the council for the protection of the public are carried out. Under its bylaw-making authority, the CPSM has established standards governing diagnostic imaging facilities. Bylaw #3 on “Accredited Facilities” specifies that a facility director must be a physician who, among other things, ensures that "work referred out of the facility is performed by persons with appropriate qualifications and competence to perform the work." 45

Pursuant to Bylaw #3, the CPSM has issued “Manitoba Diagnostic Imaging Standards” which require that a sonographer hold an active registration with CARDUP; or at the discretion of the facility director an exemption may be granted for sonographers who hold active registration status with ARDMS. 46

Currently, there are 21 statutes dealing with different health professions. The province has proposed legislation, the Regulated Health Professions Act (RHPA), to replace the statutes and bring 22 regulated health professions under one act. Sonography is not proposed to be a regulated profession. When proclaimed, ultrasound imaging, including any application of ultrasound to a fetus, will be a reserved act under its RHPA and will be performed by or directed by a member of the profession who is authorized to perform the reserved act (i.e., physician). The proposed legislation specifies that the Lieutenant Governor in Council may make regulations which govern or prohibit the application of ultrasound, including any application of ultrasound to a fetus, for non-diagnostic imaging purposes. 47

Also when proclaimed, members of ARDMS and CARDUP will be permitted to use the term “registered” in their title.

Scope of Practice

47 Section 219(1)(q) of the proposed Regulated Health Professions Act
<table>
<thead>
<tr>
<th>Section</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Controlled Acts/Reserved Acts/Restricted Acts</td>
<td>N/A</td>
</tr>
<tr>
<td>Entry to Practice Requirements</td>
<td>Entry to practice requirements are set by employers.</td>
</tr>
</tbody>
</table>
Jurisdiction

Quebec

Current Status of the Profession

Sonographers in Quebec are regulated with other diagnostic imaging professions, under a single regulator, the Ordre des technologies en imagerie médicale, en radio-oncologie et en électrophysiologie médicale du Québec (the Order). The scope of practice of Ontario’s sonographers is shared by two of Quebec’s imagining professions. Quebec’s “medical imaging technologists” and “medical electrophysiology technologists” perform the same duties as Ontario sonographers; they also perform other duties not performed by Ontario’s sonographers. “Medical imaging technologist” and “medical electrophysiology technologist” are protected titles.

The protection of the public is the primary mandate of the Order and it manages, among other things, a complaints process. In addition, members of the Order are obligated to follow a Code of Ethics.

Relevant Legislation, Regulations and By-laws

The legislation that governs sonographers, An Act Respecting Medical Imaging Technologists, Radiation Oncology Technologists and Medical Electrophysiology Technologists (the Act), also applies to other health professions.

According to Section 7 of the Act, a doctor’s prescription/order is required to initiate an ultrasound.

Scope of Practice

Sonographers in Quebec have a wider scope of practice than sonographers in other reviewed jurisdictions.

Section 7 of the Act specifies the scope of practice for medical imaging and radiation oncology technologies as using ionizing radiation, radionuclides and other forms of energy for treatment or to produce images or data for diagnostic or therapeutic purposes.

Section 11.1 of the Act specifies the practice of medical electrophysiology technology as “collecting and recording the bioelectric potentials of organs and systems of the human body, or the sound waves of the cardiac system or supra-aortic vascular network, to produce images or data for diagnostic or therapeutic purposes”.

Controlled Acts/Reserved Acts/Restricted Acts

Section 7 of the Act further lists the activities that are reserved for medical imaging technologists and radiation oncology technologists:

• Administering prescribed medications or other prescribed substances;
• Using ionizing radiation, radioelements or other forms of energy, according to a prescription;
• Monitoring reactions to medications and other substances;
• Introducing an instrument, according to a prescription, in and beyond the pharynx or beyond the opening of the urethra, labia majora or anal verge or into a peripheral vein or artificial opening; and
• Mixing substances to complete the preparation of a medication, according to a prescription.

Section 11.1 of the Act lists the activities that are reserved for medical electrophysiology technologists:
• Analyzing and selecting the data gathered during a prescribed recording of cardiac or cerebral bioelectric activity;
• Performing a stress electrocardiogram, according to a prescription;
• Administering prescribed medications or other prescribed substances by oral, nasal or pharyngeal routes;
• Administering urgently required medications using an intravenous line already in place, according to an individual prescription;
• Mixing substances to complete the preparation of a medication, according to a prescription;
• Introducing a needle under the dermis for monitoring purposes, according to a prescription;
• Using invasive electric energy, according to a prescription;
• Verifying the functioning of a pacemaker or a pacemaker-defibrillator according to a prescription, provided a training certificate has been issued to the technologist by the Order in accordance with the regulation under paragraph o of section 94 of the Professional Code (chapter C-26);
• Programming a pacemaker or a pacemaker-defibrillator according to a prescription, provided a training certificate has been issued to the technologist by the Order in accordance with the regulation under paragraph o of section 94 of the Professional Code;
• Performing echocardiography or vascular ultrasonography according to a prescription, provided a training certificate has been issued to the technologist by the Order in accordance with the regulation under paragraph o of section 94 of the Professional Code;
• Performing carotid or transcranial Doppler ultrasonography according to a prescription, provided a training certificate has been issued to the technologist by the Order in accordance with the regulation under paragraph o of section 94 of the Professional Code;
• Introducing an esophageal balloon for the purposes of a polysomnography according to a prescription, provided a training certificate has been issued to the technologist by the Order in accordance with the regulation under paragraph o of section 94 of the Professional Code; and
• Adjusting the masks for a Bi-Pap or C-Pap for the purposes of a polysomnography according to a prescription, provided a training certificate has been issued to the technologist by the Order in accordance with the regulation under paragraph o of section 94 of the Professional Code.

Entry to Practice Requirements

Members of the Order must graduate from an approved program (or equivalent), successfully challenge an admission exam and fulfil other conditions (such as payment of fees) in order to obtain a permit to practice in the province.
### Jurisdiction

New Brunswick (NB)

### Current Status of the Profession

Currently not regulated.

In 2002, it was reported that the New Brunswick Society of Diagnostic Medical Sonographers (NBSDMS) introduced a Private Members Bill that advocated for professional self-regulation; and that that the proposed legislation was approved by the Department of Health and Wellness and was pending approval by the Department of Justice for the Province of NB.\(^{49}\)

The NSBDMS has confirmed that ultrasounds performed outside a hospital environment are not paid for by the provincial healthcare system. “Entertainment scans” are not recognized as medically necessary by the provincial Medical Associations and Societies.

The provincial association has clarified that only medically necessary ultrasounds can be ordered by a physicians and nurse practitioners.

### Relevant Legislation, Regulations and By-laws

The government of New Brunswick has confirmed that there is no legislation regarding ordering and applying ultrasounds. Legislation does not cover private clinics.

### Scope of Practice

N/A

### Controlled Acts/Reserved Acts/Restricted Acts

N/A

### Entry to Practice Requirements

Entry to practice requirements are set by employers.

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Jurisdiction

Nova Scotia (NS)

Current Status of the Profession

Not currently regulated. However, the province has announced that it intends to regulate sonographers and, on May 10, 2013, the Medical Imaging and Radiation Therapy Professionals Act received Royal Assent.50

Introduction of the proposed legislation makes NS “the first jurisdiction in Canada to fully recognize and regulate diagnostic medical sonography as a distinct discipline”.51

Relevant Legislation, Regulations and By-laws

Proposed Bill No 70: Medical Imaging and Radiation Therapy Professionals Act. The proposed legislation authorizes the Nova Scotia Association of Medical Radiation Technologists to be the regulatory college for the profession. The Act sets out a structure for the new college to transition to self-regulation. Details on the functions of the college will be set out in regulations.

Scope of Practice

N/A

Controlled Acts/Reserved Acts/Restricted Acts

N/A

Entry to Practice Requirements

Entry to practice requirements are currently set by employers.


### Jurisdiction

Prince Edward Island

### Current Status of the Profession

Currently not regulated.

Currently there is no professional association.\(^{52}\)

### Relevant Legislation, Regulations and By-laws

N/A

### Scope of Practice

N/A

### Controlled Acts/Reserved Acts/Restricted Acts

N/A

### Entry to Practice Requirements

Entry to practice requirements are set by the employer.

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<thead>
<tr>
<th>Jurisdiction</th>
<th>Newfoundland and Labrador</th>
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<tbody>
<tr>
<td>Current Status of the Profession</td>
<td>Currently not regulated.</td>
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<tr>
<td>Relevant Legislation, Regulations and By-laws</td>
<td>N/A</td>
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<tr>
<td>Scope of Practice</td>
<td>N/A</td>
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<td>N/A</td>
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<td>Entry to Practice Requirements</td>
<td>Entry to practice requirements are set by the employer.</td>
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<td>Jurisdiction</td>
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<td>Nunavut</td>
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**Current Status of the Profession**

Currently not regulated.

**Relevant Legislation, Regulations and By-laws**

N/A

**Scope of Practice**

N/A

**Controlled Acts/Reserved Acts/Restricted Acts**

N/A

**Entry to Practice Requirements**

Employers set entry to practice requirements.
<table>
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<tr>
<th>Jurisdiction</th>
<th>Northwest Territories</th>
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<tbody>
<tr>
<td>Current Status of the Profession</td>
<td>Currently not regulated.</td>
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<td>Relevant Legislation, Regulations and By-laws</td>
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<tr>
<td>Scope of Practice</td>
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<td>Entry to Practice Requirements</td>
<td>Employers set entry to practice requirements.</td>
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</table>
Current Status of the Profession

Currently regulated.

The New Mexico Environment Department has confirmed that, in April 2009, New Mexico enacted a law that requires licensure of sonographers. The law includes licensure standards for magnetic resonance imaging technologists and sonographers, and adds these imaging specialties to the existing licensure provisions for radiographers, radiation technologists, nuclear medicine technologists, limited x-ray machine operators and radiologist assistants. The law has been enacted and signed, however the development of regulations to put these licensure programs into force are still under development by the New Mexico Environment Department and the Medical Imaging and Radiation Therapy Advisory Council.

Relevant Legislation, Regulations and By-laws

Medical Imaging and Radiation Therapy Health and Safety Act

Scope of Practice

Scope of practice has not been defined in the Act. It will be set out in rules and regulations.

Controlled Acts/Reserved Acts/Restricted Acts

If any, restricted activities would be set out in rules and regulations.

Entry to Practice Requirements

When the legislation is implemented, sonographers will require licensure to practice.
<table>
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<tr>
<th>Jurisdiction</th>
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<tr>
<td>Oregon</td>
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<th>Current Status of the Profession</th>
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<tbody>
<tr>
<td>Currently regulated.</td>
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On July 28, 2009, a licensure bill was signed into law which made Oregon the second state in the U.S to require licensure of sonographers. The Oregon Board of Radiologic Technologists was renamed and restructured to become the Oregon Board of Medical Imaging (OBMI) in order to ensure representation of sonographers on the Board. The sonographer licensure law required Oregon sonographers to become licensed by OBMI. As of January 1, 2014, all sonography licensees will be required to hold a national sonography certification/credentialing from an organization such as ARDMS.

<table>
<thead>
<tr>
<th>Relevant Legislation, Regulations and By-laws</th>
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<tr>
<td>Licensure law through the Oregon Board of Medical Imaging (OBMI)</td>
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</table>

As described in Enrolled House Bill 2104, and effective January 1, 2014, medical imaging procedures including ultrasound can only be performed for a medical purpose and must be ordered and interpreted by a physician or other mid-level health care provider (e.g., physician assistant, nurse practitioner) operating within their scope of practice.

<table>
<thead>
<tr>
<th>Scope of Practice</th>
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<tbody>
<tr>
<td>Scope of practice recognizes scopes set out in credentialing organizations such as ARDMS.</td>
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The OBMI has posted the following information on its website, noting that the application requirements will come into effect on January 1, 2014 when they supersede current requirements in ORS 688.455:

(1) The Board of Medical Imaging shall issue a license to a person to practice a medical imaging modality if the person makes an application in writing and pays a fee in an amount established by the board and if the person, at the time of application:

(a) Is at least 18 years of age;

(b) Satisfies one of the following:

(A) Holds a credential issued by a credentialing organization in a medical imaging modality recognized by the board;

(B) No later than December 31, 2010, passed the examination of the American Registry of Radiologic Technologists after being sponsored for the examination by the State of Oregon;

(C) Was initially licensed by the Board of Radiologic Technology before 1980 and held an active license from the Board of Medical Imaging on July 1, 2010; or

(D) Meets the requirements for licensing under ORS 688.495;

(c) Has undergone a background check to the satisfaction of the board as established in rules adopted by the board;

(d) Has not had a license of any type revoked by this state or any state, territory of the United States or nation;

(e) Has not had a credential revoked by any credentialing organization; and

(f) Meets the standards of ethical conduct established in the professional standards of the corresponding credentialing organization or a medical imaging modality’s professional society.

(2) All applicants for a license are subject to the examination policies of their respective credentialing organizations.

(3)(a) The board may consider issuing a new license to a person whose revoked credential has been reinstated by a credentialing organization or whose license of any type has been reinstated by another state.

(b) The board shall consider issuing a new license under this subsection on a case by case basis and shall adopt rules governing issuance of a new license.

**Jurisdiction**

**Australia**

**Current Status of the Profession**

Sonography is not a regulated profession in Australia. However, the Australian Sonographer Accreditation Registry (ASAR) provides accreditation for ultrasound education programs and maintains a registry of accredited sonographers. Maintaining placement on the registry requires engaging in continuing education and paying annual fees. There is no mechanism to remove a sonographer from the registry due to professional misconduct.

In addition, ASAR also advocates for the profession.

**Relevant Legislation, Regulations and By-laws**

Australia’s Medicare Benefits Schedule Book, Category 5 defines ultrasound services and billing for those services. For example, ultrasounds can only be performed if requested by certain health professionals; and before requesting an ultrasound, a determination must be made that the service is clinically relevant and necessary for patient care. (“For example: an ultrasound to determine the sex of a foetus is not a clinically relevant service (unless there is an indication that the sex of the foetus will determine further courses of treatment, eg. a genetic background to a sex-related disease or condition)”

**Scope of Practice**

Scope of practice is not legislated. ASAR recognizes the following practice areas:

- **General** – abdomen, male and female pelvis, obstetrics, musculoskeletal, superficial parts (e.g. breast, thyroid), general vascular, paediatrics.
- **Obstetrics and Gynaecology** – obstetrics, female pelvis, maternal abdomen, thyroid and breast, neonatal ultrasound examinations.
- **Vascular** – dedicated vascular ultrasound imaging, including but not limited to the abdominal vessels, fistula mapping (for dialysis), venous incompetency mapping, arterial and venous studies of the upper and lower limbs, head and neck.

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• Cardiac – paediatric and adult cardiac anatomy, function, physiology at rest, with exercise, during intervention (e.g. drug infusion, device deployment).

• Breast – dedicated ultrasound breast imaging, including interventional techniques and the correlation of examinations from other breast imaging modalities (e.g. mammography and MRI).

### Controlled Acts/Restricted Acts/Reserved Acts

N/A

### Entry to Practice Requirements

Sonographers working within the public medicare system are required to be accredited on the ASAR registry. Unaccredited sonographers can work in clinics or settings where their services are not paid for by the medicare system.
Jurisdiction

United Kingdom (UK)

Current Status of the Profession

Not separately regulated.

The British Medical Ultrasound Society states that the majority of sonographers have a background in radiography or midwifery. 58
- Radiographers must be registered with the Health Professions Council (HPC);
- Midwives must be registered with the National Midwifery Council.

Relevant Legislation, Regulations and By-laws

N/A

Scope of Practice

N/A

Controlled Acts/Reserved Acts/Restricted Acts

N/A

Entry to Practice Requirements

Entry to practice requirements are set by the employer.

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Health Professions Regulatory Advisory Council
56 Wellesley Street West, 12th Floor
Toronto, ON M5S 2S3

Telephone: 416-326-1550
Toll-Free: 1-888-377-7746
Fax: 416-326-1549

Website: www.hprac.org

Email: hpracwebmaster@ontario.ca